

**WHAT IS CLAIMED IS:**

- 1 1. A device for insertion into a standard tape player having a  
2 plurality of conventional user controls comprising:  
3 a storage device for storing encrypted digital information  
4 indicative of audio information;  
5 an interface embodied in said housing for converting digital  
6 information to magnetic signals which are presented to said tape  
7 player; and  
8 a processor, said processor being operable to access said  
9 encrypted digital information for decrypting said digital information  
10 and for controlling the transmission of decrypted audio information  
11 to said interface.
- 1 2. An interface device according to claim 1, further including  
2 an insertion port for removably receiving said storage device.
- 1 3. A device according to claim 1, wherein said audio  
2 information is music and said processor is operable to select for  
3 playback by said tape player a user specified musical performance.
- 1 4. A device according to claim 3, wherein said user specified  
2 musical performance is specified by advancing to the next  
3 performance.

1 5. A device according to claim 3, wherein said user specified  
2 musical performance is specified by musical performance number.

1 6. A device according to claim 1, further including a memory  
2 for storing a device private key and wherein said processor performs  
3 said decrypting operation using said device private key.

1 7. A device according to claim 6, wherein said device private  
2 key has an associated public key.

1 8. A device according to claim 7, wherein said associated  
2 public key has a digital certificate which certifies that the public key  
3 is associated with said device.

1 9. A device according to claim 1, wherein said processor is  
2 operable to check whether the digital information may be validly  
3 presented to said user.

1 10. A device according to claim 1, further including a  
2 connector for connecting said device to an external speaker, said  
3 processor being operable to control operation in a cassette emulator  
4 mode and in an audio player mode independent of said standard tape  
5 player.

1 11. A device for insertion into a standard audio tape player  
2 having a plurality of conventional user controls comprising:

a

3 a housing having substantially the same physical dimensions  
4 as a standard audio cassette;  
5 a storage device embodied in said housing for storing digital  
6 data encrypted in accordance with a cryptographic key, said  
7 encrypted data representing audio information to be presented to a  
8 user;  
9 an interface embodied in said housing for converting digital  
10 information to magnetic signals which are presented to said audio  
11 tape player; and  
12 a processor for decrypting said encrypted information in  
13 accordance with a device cryptographic key.

1 12. A device according to claim 11, wherein said audio  
2 information includes a plurality of musical performances and wherein  
3 said processor is responsive to user actuation of at least one of said  
4 audio tape player user controls to select a desired one of said plurality  
5 of musical performances for playback.

1 13. A device according to claim 11, wherein said processor is  
2 operable to check whether the digital information may be validly  
3 presented to said user.

a1  
14. A device according to claim 11, further including a  
connector for connecting said device to an external speaker, said  
processor being operable to control operation in a cassette emulator  
mode and in an audio player mode independent of said standard tape  
player.

15. A device for insertion into an audio tape player having a  
plurality of user controls and for responding to user actuation of one  
of said controls to place said audio tape player in a state to initiate a  
selected operation when a conventional audio cassette has been  
inserted into said player, said device comprising:  
a storage device for storing digital information representing  
audio information;  
a memory for storing a secret private key corresponding to a  
device public key;  
an interface for converting digital information read out of said  
storage device to magnetic signals which are presented to said audio  
tape player;  
a plurality of sensors to detect the state of said audio cassette  
player; and  
a processor responsive to the state of at least one of said  
plurality of sensors for controlling said device to initiate an operation  
emulating the user selected operation on said audio cassette player,  
said processor being operable to perform a decryption operation by

19 accessing said secret private key corresponding to a device public  
20 key stored in said memory.

21 16. A device according to claim 15, wherein said plurality of  
22 sensors includes a transducer carriage position sensor.

1 17. A device according to claim 15, wherein said plurality of  
2 sensors includes a tape player pinch roller sensor.

1 18. A device according to claim 15, wherein said plurality of  
2 sensors includes spindle wheel sensor.

1 19. A device according to claim 15, wherein said plurality of  
2 sensors includes a tape player erase head sensor.

1 20. A device according to claim 15, further including a  
2 connector for connecting said device to an external speaker, said  
3 processor being operable to control operation in a cassette emulator  
4 mode and in an audio player mode independent of said standard tape  
5 player.

1 21. For use with an interface device for insertion into an audio  
2 tape player having a plurality of user controls and for responding to  
3 user actuation of one of said controls to place said audio tape player  
4 in a state to initiate a selected operation when a conventional audio  
5 cassette has been inserted into said player, a method for acquiring  
6 audio information for said device comprising the steps of:

a1  
666220"ETHE9E60

7 requesting audio information by a user from a vendor by  
8 providing an indication of the audio information to be acquired;  
9 receiving audio information encrypted by the vendor under a  
10 device cryptographic key; and  
11 storing the audio information received from the vendor in a  
12 memory in the device.

1 22. A method according to claim 21, wherein said requesting  
2 step includes the step of requesting audio information by a user over  
3 a network through the user's computer.

1 23. A method according to claim 21, wherein said receiving  
2 step includes the step of receiving the audio information from another  
3 user's interface device.

1 24. A method according to claim 21, wherein said requesting  
2 step includes the step of  
3 transmitting billing authorization information to the vendor,  
4 whereby the vendor may check the validity of the billing  
5 authorization information.

1 25. A method according to claim 21, wherein said receiving  
2 step includes the step of receiving the audio information from the  
3 vendor, transferring the encrypted audio information to a removable  
4 memory for the device, and coupling the removable memory to the  
5 device.

1 26. A method according to claim 21, wherein the step of  
2 decrypting the audio information includes the step of decrypting the  
3 audio information using a device private key.

1 27. A method according to claim 21, wherein the received  
2 encrypted information is digitally signed and further including the  
3 step of verifying the signed material using a public key which can be  
4 verified by virtue of indicators stored within the device.

1 28. A method according to claim 21, wherein the audio  
2 information is encrypted such that it is accessible only by the device.

1 29. A method according to claims 21, further including the  
2 step of storing a library of encrypted audio information on a memory  
3 external to the device.

1 30. A method according to claim 21, wherein the audio  
2 information contains a header containing information about the audio  
3 information.

1 31. For use with an interface device for insertion into an audio  
2 tape player having a plurality of user controls and for responding to  
3 user actuation of one of said controls to place said audio tape player  
4 in a state to initiate a selected operation when a conventional audio  
5 cassette has been inserted into said player, a method for operating  
6 said device comprising the steps of:

666220" ETHE9E60

7 storing encrypted digital data representing audio information in  
8 a memory device disposed in said device;  
9 accessing by a processor embodied in said device said  
10 encrypted digital information;  
11 decrypting by said processor said encrypted digital  
12 information;  
13 controlling the transmission of decrypted audio information to  
14 an interface; and  
15 converting digital information to magnetic signals which are  
16 presented to said tape player.

1 32. A method according to claim 31, further including the step  
2 of storing a secret private key corresponding to a device public key.

1 33. A method according to claim 31, further including the  
2 steps of detecting by a plurality of sensors the state of said audio  
3 cassette player; and  
4 controlling by said processor responsive to the state of at least  
5 one of said plurality of sensors said device to initiate an operation  
6 emulating the user selected operation on said audio cassette player.

1 34. A method according to claim 32, wherein said processor is  
2 operable to perform a decryption operation by accessing a secret  
3 private key corresponding to a device public key.



1 35. In an interface device for transferring digital data to  
2 equipment designed to process magnetic storage media signals and  
3 having a plurality of user controls, the method comprising the steps  
4 of:

5 storing in the device encrypted digital information relating to a  
6 performance to be presented to a user;

7 inserting the device into the equipment;

8 decrypting the encrypted digital information;

9 converting the digital information to magnetic signals which  
10 are presented to the equipment's magnetic sensors;

11 detecting changes in operation of the equipment intended to  
12 control the magnetic media; and

13 generating an audio message relating to the performance  
14 presentation in response to the user actuating at least one of said user  
15 controls.

1 36. A method according to claim 35, wherein said audio  
2 message is an announcement of the amount of time which has been  
3 skipped forward.

1 37. A method according to claim 35, wherein said audio  
2 message is an announcement of the amount of time which has been  
3 skipped backward.

1 38. A method according to claim 35, wherein said audio  
2 message is an announcement of the relative performance completed  
3 with respect to the start of the performance presentation.

1 39. A method according to claim 35, wherein said audio  
2 message relates to an announcement relating to the relative media  
3 position with respect to the start of the performance.

1 40. A method according to claim 35, wherein said audio  
2 message is an announcement relating to the media position relative to  
3 when normal play last stopped.

1 41. A method according to claim 35, wherein said audio  
2 message is an announcement that the transmission has been paused.

1 42. A method according to claim 35, wherein said audio  
2 message is an announcement that the information is positioned to  
3 start back at the beginning of the performance presented to the user.

1 43. A method according to claim 35, wherein said audio  
2 message is generated by the device.

1 44. A method according to claim 35, wherein said audio  
2 message is derived from information that has been prestored in a  
3 digital memory embodied in the device.

a!

1 45. The method according to claim 35, wherein the equipment  
2 includes a fast forward control and further including the step of  
3 generating magnetic signals in response to the actuation of said fast  
4 forward control by generating audio sounds that occur at a relatively  
5 rapid rate.

1 46. The method according to claim 35, wherein the equipment  
2 includes a reverse control and further including the step of generating  
3 magnetic signals in response to user actuation of the reverse control  
4 by processing digital information to be presented successively earlier  
5 in time.

0936343 0749260